AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

Claims 1-4 (Cancelled)

5. (Currently Amended) The apparatus of Claim [[1]] 44 wherein said biasing element is a spring.

6. (Currently Amended) The apparatus of Claim [[1]] 40 wherein said ~~positional pressure~~ forming steel assembly comprises an extension extending outwardly therefrom and [[a]] the tool steel is disposed on an end of said extension.

7. (Currently Amended) The apparatus of Claim 6 wherein said robotic arm rotatably supports said ~~positional pressure~~ forming steel assembly.

8. (Currently Amended) The apparatus of Claim 7 wherein said ~~positional pressure~~ forming steel assembly further comprises a second extension extending outwardly therefrom and a second tool steel disposed on an end of said second extension.

9. (Previously Presented) The apparatus of Claim 6 wherein said extension comprises a tiered extension having a first tool steel disposed on an outer portion of said extension and a second tool steel disposed on an inner portion of said extension.

Claim 10 – 12 (Cancelled)

13. (Currently Amended) The apparatus of claim [[1]] 40 wherein said robotic arm rotatably supports said ~~positional pressure~~ forming steel assembly.

Claims 14-17 (Cancelled)

18. (Currently Amended) The apparatus of Claim [[14]] 50 wherein said biasing element is a spring.

19. (Currently Amended) The apparatus of Claim [[14]] 46 wherein said ~~positional pressure~~ forming ~~steel~~ and joining assembly comprises an extension extending outwardly therefrom and [[a]] the tool steel disposed on an end of said extension.

20. (Currently Amended) The apparatus of claim 19 wherein said robotic arm rotatably supports said ~~positional pressure~~ forming and joining~~steel~~ assembly.

21. (Currently Amended) The apparatus of Claim 20 wherein said ~~positional pressure~~ forming ~~steel~~ and joining assembly further comprises a second extension extending outwardly therefrom and a second tool steel disposed on an end of said second extension.

22. (Previously Presented) The apparatus of Claim 19 wherein said extension comprises a tiered extension having a first tool steel disposed on an outer portion of said extension and a second tool steel disposed on an inner portion of said extension.

Claims 23 – 25 (Cancelled)

26. (Currently Amended) The apparatus of claim [[14]] 46 wherein said robotic arm rotatably supports said ~~positional pressure~~ forming and joining~~steel~~ assembly.

Claims 27 – 34 (Cancelled)

35. (Currently Amended) The apparatus of Claim [[10]] 45 wherein said forming steel assembly further comprises ~~:~~

~~———~~an extension extending outwardly from said ~~hub~~ positional pressure unit in a direction perpendicular to an axis of rotation of said roller~~; and~~

~~———a~~ , wherein the tool steel is disposed on an end of said extension.

36. (Currently Amended) The apparatus of claim [[35]] 40 wherein said tool steel has a ~~wedged face shape~~ tapered, wedge-shaped face formed thereon~~in a face thereof~~.

37. (Currently Amended) The apparatus of Claim [[14]] 51 wherein said forming ~~steel~~ and joining assembly further comprises an extension extending outwardly from said ~~hub~~ positional pressure unit in a direction perpendicular to an axis of rotation of said roller and supporting said ~~tools~~ tool steel on an end of said extension.

38. (Currently Amended) The apparatus of claim [[38]] 46 wherein said tool steel has a ~~wedged face shape~~ tapered, wedge-shaped face formed thereon~~in a face thereof~~.

39 (Cancelled)

40. (New) An apparatus for short flange forming, the apparatus comprising:

a nest for holding a first sheet material;

a robotic arm operatively associated with said nest; and

a forming steel assembly including a tool steel fixedly attached at an end of the robotic arm, the tool steel having a wedge-shaped face generally conforming to a short flange for crash forming the short flange on the first sheet material.

41. (New) The apparatus of claim 40 further comprising a mechanical positioner coupled to the forming steel assembly for stabilizing the tool steel during crash forming impact.

42. (New) The apparatus of Claim 41 wherein the mechanical positioner includes a positional pressure unit operatively associated with the robotic arm and cooperative with the nest for stabilizing the tool steel during crash forming impact.

43. (New) The apparatus of Claim 42 wherein the positional pressure unit further comprises a cylinder and a hub supported within said cylinder for relative sliding movement.

44. (New) The apparatus of Claim 43 further including a biasing element interposed between said cylinder and said hub.

45. (New) The apparatus of Claim 42 wherein the mechanical positioner includes a roller supported on the positional pressure unit and a guide surface extending from the nest parallel with an approach path of the forming steel assembly.

46. (New) An apparatus for forming and joining a first sheet material to a second sheet material, the first sheet material having a periphery, the periphery having a contour, the apparatus comprising:

a nest including a material-contacting portion for holding the first sheet material;

a forming and joining assembly operatively associated with said nest, said assembly including a robotic arm and a tool steel fixedly attached at an end of the robotic arm, the tool steel having a wedge-shaped face generally conforming to a short flange for crash forming the short flange and bending the short flange onto said second sheet material between the tool steel and the material contacting portion; and

a computer having a tool-driving program operatively associated with the forming and joining assembly for manipulating and guiding the tool steel along an approach path during crash forming impact.

47. (New) The apparatus of claim 46 further comprising a mechanical positioner coupled to the forming steel assembly for stabilizing the tool steel during crash forming impact.

48. (New) The apparatus of Claim 47 wherein the mechanical positioner includes a positional pressure unit operatively associated with the robotic arm and cooperative with the nest for stabilizing the tool steel during crash forming impact.

49. (New) The apparatus of Claim 48 wherein the positional pressure unit further comprises a cylinder and a hub supported within said cylinder for relative sliding movement.

50. (New) The apparatus of Claim 49 further including a biasing element interposed between said cylinder and said hub.

51. (New) The apparatus of Claim 48 wherein the mechanical positioner includes a roller supported on the positional pressure unit and a guide surface extending from the nest parallel with the approach path.